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CYM-037 (11.020012)

CLAIM AMENDMENTS

The following complete listing of the claims replaces all previous listings:

1-129. Canceled.

130. (Previously Presented) An automatic focusing method for an optical system, comprising:
performing an initial course focus action along a focal axis at a scan position corresponding to a point on a surface of a slide; and
respectively performing a plurality of subsequent fine focus actions along a plurality of focal axes at a plurality of scan positions corresponding to different points on the slide surface, wherein the performance of at least one of the fine focus actions comprises obtaining images of the slide at a plurality of coordinates within a predetermined range along the respective focal axis.

131. (Previously Presented) The method of claim 130, wherein the coordinates are evenly distributed within the predetermined range.

132. (Previously Presented) The method of claim 130, wherein the performance of each fine focus action comprises determining an in-focus coordinate along the focal axis.

133. (Previously Presented) The method of claim 130, wherein the performance of the course focus action comprises determining an in-focus coordinate along the focal axis.

134. (Previously Presented) The method of claim 133, wherein the performance of each of the fine focus actions is based on the in-focus coordinate determined in the course focus action.

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135. (Previously Presented) The method of claim 134, wherein the performance of each of the fine focus actions comprises estimating an in-focus coordinate along the respective focal axis as a function of the in-focus coordinate determined in the course focus action and a global focal plane.

136. (Previously Presented) The method of claim 130, wherein the performance of the course focus action comprises repeatedly obtaining an image of the slide at different coordinates along the focal axis until an in-focus coordinate is determined.

137. (Previously Presented) The method of claim 132, wherein the performance of each of the fine focus actions comprises obtaining images of the slide at predetermined coordinates relative to the estimated in-focus coordinate along the respective focal axis.

138. (Previously Presented) The method of claim 130, wherein the performance of each fine focus action comprises selecting one of the plurality of coordinates as an in-focus coordinate based on an examination of the images.

139. (Previously Presented) The method of claim 130, wherein the performance of at least one of the course focus action and each fine focus action comprises:

obtaining images of the slide at a plurality of coordinates along the focal axis;
determining a plurality of focus scores for the respective coordinates; and
selecting one of the coordinates as an in-focus coordinate based on the focus scores.

140. (Previously Presented) The method of claim 139, wherein the coordinate having a maximum focus score is the coordinate selected as the in-focus coordinate.

141. (Previously Presented) The method of claim 130, wherein the slide carries a biological specimen.

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142. (Previously Presented) The method of claim 130, wherein the course focus action and fine focus actions are performing during a single image scan.

143. (Previously Presented) The method of claim 130, wherein the performance of one or both of the course focus action and fine focus actions comprises moving an element of the optical system relative to the slide surface to coordinates along the respective focal axes.

144. (Previously Presented) The method of claim 130, wherein the performance of the fine focus actions comprises moving an element of the optical system relative to the slide along a scan axis to the respective scan positions.

145-168. Canceled.